

Patent Application No. 09/338,035

IN THE CLAIMS:

Please amend claims 1, 8 and 9 as follows:

1           1. (currently amended) A method for processing tasks in a data  
2     processing system including a microprocessor and an instruction cache  
3     wherein tasks of different types are defined in the system, each task type  
4     having code associated therewith, the tasks being processed ~~in~~ out of  
5     sequential order by loading the associated code into the instruction cache  
6     for execution on the microprocessor, the method comprising the step of  
7           placing the tasks of the same task type into a batch such that the  
8     tasks in a batch are processed before processing the next ordered task;  
9     and  
10           wherein the tasks of the same task type use same code in the  
11   instruction cache.

1           2. (original) A method as claimed in claim 1 wherein the code  
2     associated with at least one type of task fits within the instruction  
3     cache, the method comprises the further steps of: processing such a  
4     task by loading the associated code into the instruction cache and  
5     executing the code on the microprocessor, and, on a determination  
6     that there is a further task of like type in the batch, executing the  
7     loaded code to process the further task.

1           3. (original) A method as claimed in claim 1 wherein the code  
2     associated with at least one type of task is not capable of being  
3     loaded as a whole into the instruction cache, the code being  
4     logically divided at one or more break points into two or more  
5     portions, and wherein during processing of such a task, the method  
6     comprises the further steps of responding to a break point defined  
7     within a first portion of the code to schedule a further task for  
8     future execution of a second portion of the code.

1           4. (original) A method as claimed in claim 3 wherein the  
2     further scheduled task is placed in a batch of like tasks.

1           5. (original) A method as claimed in claim 3 wherein each of  
2     portions of code defines an atomic operation.

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1           6. (previously presented) A method as claimed in claim 1,  
2 wherein a task is placed in a batch at the time the task is  
3 scheduled.

1           7. (previously presented) A method as claimed in claim 1  
2 wherein the tasks are managed as a queue.

1           8. (currently amended) A computer program product comprising a  
2 computer usable medium having computer readable program code means  
3 embodied in the medium for processing tasks in a data processing  
4 system, the data processing system including a microprocessor and an  
5 instruction cache and wherein tasks of different types are defined in  
6 the system, each task type having code associated therewith, the  
7 tasks being processed ~~in~~ out of sequential order by executing the  
8 associated code on the microprocessor, the program code means  
9 comprising code means for scheduling tasks of the same type into a  
10 batch such that tasks in a batch are processed before processing the  
11 next ordered task, wherein the tasks of the same type use the same  
12 program code.

1           9. (currently amended) Data processing apparatus comprising a  
2 microprocessor and an instruction cache wherein tasks of different types  
3 are defined in the system, each task type having code associated  
4 therewith, the apparatus including:  
5           means for processing the tasks ~~in~~ out of sequential order by loading  
6 the associated code into the instruction cache for execution on the  
7 microprocessor; and  
8           means for scheduling tasks of the same type into a batch, wherein  
9 the means for processing the tasks is operable to process the tasks in a  
10 batch before processing the next ordered task; and  
11           wherein the tasks of the same type use the same program code.

1           10. (original) Data processing apparatus as claimed in claim 9  
2 wherein the microprocessor and i-cache are embodied on a single chip.

1           11. (previously presented) A method for scheduling tasks in a task  
2 queue, the method comprising:  
3           identifying a new task to be scheduled in the task queue;

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4       determining if the task queue includes a cached task that requires  
5       the same code to process the cached task and the new task; and  
6       batching the new task with the cached task if the task queue  
7       includes the cached task that requires the same code to process the cached  
8       task and the new task.

1       12. (previously presented) The method of claim 11, further  
2       comprising adding the new task to the end of the queue if the task queue  
3       does not include the cached task that requires the same code to process  
4       the cached task as the new task.

1       13. (previously presented) The method of claim 11, further  
2       comprising:  
3       loading task code for processing the cached task into an instruction-  
4       cache;  
5       executing the task code for processing the cached task in the  
6       instruction cache; and  
7       executing the task code for processing the new task in the  
8       instruction cache without loading new code into the instruction cache.

1       14. (previously presented) The method of claim 13, further  
2       comprising:  
3       determining if the task code is capable of fully loading into the  
4       instruction cache; and  
5       if the task code is not capable of fully loading into the  
6       instruction cache, logically dividing the task code such that at least one  
7       atomic portion of the task code will fully load in the instruction cache.

1       15. (previously presented) A computer program product embodied in a  
2       tangible media comprising:  
3       computer readable program codes coupled to the tangible media for  
4       scheduling tasks in a task queue, the computer readable program codes  
5       configured to cause the program to:  
6       identify a new task to be scheduled in the task queue;  
7       determine if the task queue includes a cached task that requires the  
8       same code to process the cached task and the new task; and  
9       batch the new task with the cached task if the task queue includes

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10 the cached task that requires the same code to process the cached task and  
11 the new task.

1 16. (previously presented) The computer program product of claim  
2 15, wherein the program code is further configured to cause the program to  
3 add the new task to the end of the queue if the task queue does not  
4 include the cached task that requires the same code to process the cached  
5 task as the new task.

1 17. (previously presented) The computer program product of claim  
2 15, wherein the program code is further configured to cause the program  
3 to:  
4 load task code for processing the cached task into an instruction  
5 cache;  
6 execute the task code for processing the cached task in the  
7 instruction cache; and  
8 execute the task code for processing the new task in the instruction  
9 cache without loading new code into the instruction cache.

1 18. (previously presented) The computer program product of claim  
2 17, wherein the program code is further configured to cause the program  
3 to:  
4 determine if the task code is capable of fully loading into the  
5 instruction cache;  
6 if the task code is not capable of fully loading into the  
7 instruction cache, logically divide the task code such that at least one  
8 atomic portion of the task code will fully load in the instruction cache.